

REMARKS

Claims 1 and 3-22 are pending in the application.

Claims 5-12 are withdrawn from consideration.

Claims 1 and 4 are rejected under 35 U.S.C. 102(b).

Claim 2, 3 and 13-15 are rejected under 35 U.S.C. 103(a).

The specification is amended to address a minor editorial issue.

FIGS. 8 and 11 are amended to more accurately illustrate the structure formed by the process described in the specification as originally filed.

Claims 1 and 13 are amended.

Claim 2 is cancelled.

Claims 16-22 are added.

No new matter is added.

Applicants request reconsideration and allowance of the claims in light of the above amendments and following remarks.

Claim Rejections – 35 U.S.C. § 102

Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,659,194 issued to Iwamatsu et al. (hereinafter “Iwamatsu”). Applicants respectfully traverse this rejection.

Claim 1 has been amended to incorporate, among other features, the subject matter previously recited in claim 2. Accordingly, amended claim 1 now recites, “sidewall spacers disposed on sidewalls of the gate pattern, the sidewall spacers comprising an inner spacer having an L-shaped cross-section that is formed on a sidewall of the gate pattern and neighboring the gate pattern, and an outer spacer having a cured sidewall that is formed on the inner spacer and covering entire sidewalls of the gate pattern.” Support for this amendment can be found at, for example, FIGS. 8-11 of the specification as originally filed. Applicants respectfully submit that Iwamatsu fails to teach or suggest at least the features that are presently recited in claim 1.

Moreover, the combination of Iwamatsu in view of U.S. Patent No. 5,153,145 issued to Lee et al. (hereinafter “Lee”) fails to render claim 1 obvious. For example, FIG. 4 of Lee clearly illustrates wherein spacer 23 only partially covers sidewalls of the gate stack 18. Because the spacer 23 only partially covers sidewalls of the gate stack 18, the spacer 23 does not cover entire

sidewalls of the gate stack 18. Because neither Iwamatsu nor Lee, singly or in combination, teach or suggest at least the aforementioned elements in amended claim 1, the combination of Iwamatsu in view of Lee fails to render amended claim 1 obvious. See M.P.E.P. § 2143.03.

Claim 4 depends from claim 1 and, therefore, includes each and every element recited in claim 1. Accordingly, Applicants respectfully submit that Iwamatsu fails to anticipate claim 4 at least by virtue of its dependency from claim 1.

Claim Rejections – 35 U.S.C. § 103

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamatsu in view of Lee. Applicants respectfully submit that this rejection is moot in view of the cancellation of claim 2.

Claims 3, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamatsu in view of U.S. Patent No. 6,339,245 issued to Maa et al. (hereinafter “Maa”) and Applicants’ Admitted Prior Art (hereinafter “the AAPA”). Applicants respectfully traverse this rejection.

Claim 3 depends from claim 1 and, therefore, includes each and every element recited in claim 1. As shown above, Iwamatsu fails to anticipate claim 1. Moreover, neither Maa nor the AAPA cures the above-described deficiency of Iwamatsu. Accordingly, Applicants respectfully submit that the combination of Iwamatsu in view of Maa and the AAPA fails to render claim 3 obvious at least by virtue of its dependence from claim 1.

Further rejecting claim 3, the Office Action acknowledges that Iwamatsu fails to teach wherein the element isolating oxide film 2 “[includes] ‘a dent … at the region neighboring the active region’ (i.e., a dent at the edge of the … [element isolating oxide film 2].” Attempting to cure this deficiency, the Office Action asserts that Maa teaches wherein “blocking silicide from forming at the boundary between a field oxide and a source/drain region is advantageous when the field oxide is formed by LOCOS or formed by … STI.” Applicants generally agree with this teaching of Maa. However, the Office Action further asserts that it would be obvious to “adopt STI… for the … [element isolating oxide film 2] in … [Iwamatsu], motivated by the teaching of … [Maa] that blocking silicide at the boundary of a STI and source/drain region is advantageous in lowering junction spiking.” Applicants respectfully disagree.

Maa does not teach or suggest wherein junction spiking can be lowered simply by forming a field oxide region using an STI technique instead of a LOCOS technique. Moreover, the Office Action fails to identify any basis in fact or technical reasoning to reasonably support a determination that the junction spiking described in Maa can be lowered simply by forming a field oxide region using an STI technique instead of a LOCOS technique. Absent any objective evidence to the contrary, Maa would not motivate one of ordinary skill in the art to “adopt STI... for the ... [element isolating oxide film 2] in ... [Iwamatsu]” simply to lower junction spiking, as asserted by the Office Action.

For at least the aforementioned reasons, Applicants respectfully submit that the combination of Iwamatsu in view of Maa and the AAPA fails to render claim 3 obvious. See M.P.E.P. § 2143.01(I).

Further rejecting claim 3, the Office Action asserts that, upon forming the element isolating oxide film 2 of Iwamatsu using an STI technique instead of a LOCOS technique, the modified isolating oxide film 2 of Iwamatsu in view of Maa (an STI structure) would include the claimed dent – per the teachings of the AAPA. Applicants respectfully disagree.

The AAPA states “[a]s shown in Fig. 1, it is common for a dent to form in the isolation layer 12” when the isolation layer 12 is formed by a trench isolation technique. See page 2, lines 1-3. The AAPA fails to state or suggest that a dent will always be included in every isolation layer, regardless of the trench isolation technique by which it was formed. Moreover, it is certain that the AAPA fails to state or suggest that the field oxide regions 22 and 62 of Maa actually include a dent. Further, the Office Action fails to identify any basis in fact or technical reasoning to reasonably support a determination that the modified isolating oxide film 2 of Iwamatsu in view of Maa (formed using an STI technique) includes the claimed dent simply because the isolating layer 12 of the AAPA includes the claimed dent.

For at least the aforementioned reasons, and absent any objective evidence to the contrary, Applicants respectfully submit that the combination of Iwamatsu in view of Maa and the AAPA fails to render claim 3 obvious. See M.P.E.P. § 2143.03.

Elements recited in claim 13 are similar to those recited in claim 3. Accordingly, arguments presented above with respect to claim 3 are similarly applicable in traversing the rejection of claim 13.

Claim 15 depends from claim 13 and, therefore, includes each and every element recited in claim 13. Accordingly, Applicants respectfully submit that the combination of Iwamatsu in view of Maa and the AAPA fails to render claim 15 obvious at least by virtue of its dependency from claim 13.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamatsu in view of Maa and the AAPA, and further in view of Lee. Applicants respectfully traverse this rejection.

Claim 14 depends from claim 13 and, therefore, includes each and every element recited in claim 13. As shown above, the combination of Iwamatsu in view of Maa and the AAPA fails to render claim 13 obvious. Moreover, Lee does not cure the above-described deficiency of Iwamatsu in view of Maa and the AAPA. Accordingly, Applicants respectfully submit that the combination of Iwamatsu in view of Maa, the AAPA and Lee fails to render claim 14 obvious at least by virtue of its dependence from claim 13.

New Claims

Support for new claims 16, 18, 19 and 22 can be found at, for example, FIGS. 5, 10A, 10B and 11 of the specification as originally filed.

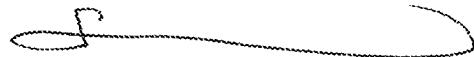
Support for new claims 17, 20 and 21 can be found at, for example, FIGS. 9A, 9B, 10A and 10B as originally filed and at FIGS. 8 and 11 as currently amended.

CONCLUSION

For the foregoing reasons, reconsideration and allowance of the pending claims of the application as amended is requested. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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